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ABSTRACT

Designed to measure syntactic fluency or maturity in narrative writing, the Syntactic Maturity Test for Narrative Writing (SMTNW) is in two parts: (1) the test itself, a group of seventy-six kernel sentences making a coherent narrative, and (2) a means of syntactic analysis of the written samples that result when respondents rewrite the narrative, combining the kernel sentences. The test is based on a synopsis of a portion of "The Adventures of Huckleberry Finn," and the seventy-six kernel sentences are arranged in five separate sections. Combining kernel sentences in as many ways as they can, respondents work through the sections in order. The resulting narratives are then given a grammatical analysis to determine the level of syntactic maturity. [This document is one of those reviewed in The Research Instruments Project (TRIP) monograph "Measures for Research and Evaluation in the English Language Arts" to be published by the Committee on Research of the National Council of Teachers of English in cooperation with the ERIC Clearinghouse on Reading and Communication Skills. A TRIP review which precedes the document lists its category (Writing) title, author, date, and age range (intermediate--postsecondary), and describes the instrument's purpose and physical characteristics.] (WR)

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Category: Writing

Title: Syntactic Maturity Test for Narrative Writing

Author: Fritz Dauterman

Age Range: Intermediate-Post Secondary

Description of Instrument:

Purpose: To measure syntactic fluency or maturity in narrative writing.

Date of Construction: 1969

Physical Description: SMTNW is in two parts: (1) the test itself, a group of seventy-six kernel sentences making a coherent narrative and (2) a means of syntactic analysis of the written samples that result when respondents rewrite the narrative, combining the kernel sentences. The test is based on a synopsis of a portion of The Adventures of Huckleberry Finn, the seventy-six kernel sentences arranged in five separate sections. Combining kernel sentences in as many ways as they can, respondents work through the sections in order. The resulting narratives are then given a grammatical analysis to determine the level of syntactic maturity.

The first level of analysis involves enumerating the following indices: subordination ratio, number of words per subordinate clause, number of words per T-unit, and the average level at which constituent kernels are embedded in or attached to a matrix. The second level of analysis involves counting the frequency of use of certain grammatical constructions.

Validity, Reliability, and Normative Data:

Validity of SMTNW rests on the accuracy of transformational-generative grammar and on the research of Kellogg Hunt in the development of syntactic fluency.

No rater reliability data for the analysis itself is reported. Nor is reliability data reported on the measure itself.

Normative data is available on a sample of 216 middle class Ohio secondary school students (I.Q. group means from 111 to 119). These data are presented below:

GRADE LEVEL MEANS AND STANDARD DEVIATIONS OF THE FOUR INDICES

Grade Level		Mean Subordinate Clause Length	Subordination Ratio	Mean T-unit Length	Mean Depth
Seventh	M	7.116	0.299	11.928	1.599
	SD	0.924	0.088	1.964	0.193
Eighth	M	7.017	0.334	13.048	1.693
	SD	1.049	0.100	2.530	0.197
Ninth	M	7.537	0.363	14.301	1.778
	SD	0.720	0.084	2.243	0.197
Tenth	M	7.451	0.405	15.340	1.794
	SD	0.963	0.070	1.750	0.158
Eleventh	M	7.688	0.379	14.789	1.841
	SD	0.755	0.060	1.772	0.127
Twelfth	M	7.519	0.367	14.766	1.794
	SD	0.064	0.064	1.207	0.114

Ordering Information:

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Related Documents:

Dauterman, Fritz P. The Syntactic Structures Employed in Samples of Narrative Writing by Secondary School Students. Ann Arbor, Michigan: University Microfilms, 1969. Order No. 70-6757.

Hunt, Kellogg. Grammatical Structures Written at Three Grade Levels. Urbana, Illinois: National Council of Teachers of English, Research Report No. 3, 1965.

THE SYNTACTIC STRUCTURES EMPLOYED IN SAMPLES OF NARRATIVE WRITING BY SECONDARY SCHOOL STUDENTS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Fritz Philip Dauterman, B.A., B.S., M.A.

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The Ohio State University
1969

Approved by

Wilfred Eberhart

Adviser
College of Education

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DAUTERMAN, Fritz Philip, 1935-
THE SYNTACTIC STRUCTURES EMPLOYED IN SAMPLES OF NARRATIVE WRITING BY SECONDARY SCHOOL STUDENTS.

The Ohio State University, Ph.D., 1969
Language and Literature, linguistics

University Microfilms, Inc., Ann Arbor, Michigan

This test is composed of several sections. Each section is made up of several short sentences, each of which represents a single idea.

In this test you will combine the short sentences in each section into one or more larger sentences. After you complete one section, you will immediately go on to the next. You may combine the short sentences in any one section in any way you wish. Look at the following example:

1. A man avoids arguments.	A man avoids arguments is tactful.
2. A man is tactful.	A man who is tactful avoids arguments.

Some of the short sentences will contain the word something which will stand for another idea. The following short sentence will tell what that idea is.

1. I hope something.	I hope the team will win.
2. (something=) The team will win.	

When you combine the short sentences in any section, make sure you account for all the ideas in a section and make sure that you don't add any ideas not given. What errors can you find in the following example?

1. We won the championship.	When we won the championship by defeating South, Mr. Briggs spoke to the students.
2. Mr. Briggs spoke to the students.	
3. Mr. Briggs is our principal.	

When you combine the short sentences in any section, you do not have to follow the same sequence of short sentences as given in that section. Notice what happens to the following sequence of short sentences when they are combined into a single, larger sentence.

1. The man left.	When it began to rain, the old man left.
2. It began to rain.	
3. The man was old.	

Remember, finally, that in most sections you will have to combine the short sentences into two or more longer sentences. Keep in mind that this examination is not designed to measure how many short sentences you can combine into a single, larger sentence; rather it is designed to determine how mature you are in the use of written language.

1. Huckelberry Finn and Tom Sawyer had found a box.
2. The box contained gold.
3. Judge Thatcher had taken the money.
4. Judge Thatcher had invested the money.
5. Judge Thatcher had given the boys a huge allowance.
6. Widow Douglas had taken Huck home.
7. Widow Douglas wanted something.
8. (something=) Widow Douglas should civilize Huck.
9. At first Huck did not like something.
10. (something=) Huck lived with Widow Douglas.
11. Huck had to go to school.
12. Huch had to learn something.
13. (something=) Huck read.

SECTION B

14. Huck knew something.
15. (something=) Huck's father would return.
16. Huck's father would hunt Huck for the money.
17. Huck's father finally showed up one night in Huck's room.
18. Huck's father took Huck away to a cabin.
19. The cabin was in the woods.
20. At the cabin Huck's father kept Huck something.
21. (something=) Huck was a prisoner.
22. Huck's father periodically beat Huck.
23. Huck's father half starved Huck.
24. One night Huck sneaked away.
25. Huck left behind him a trail.
26. The trail was bloody.
27. The blood was from a pig.
28. Huck killed the pig.
29. Everyone would believe something.
30. (something=) Huck was dead.

SECTION C

31. Huck took a boat to Jackson's Island.
32. Huck hid at Jackson's Island.
33. The excitement had blown over.
34. Later Huck went to another part of the island.
35. There he discovered Jim.
36. Jim was a slave.
37. Jim had run off.
38. Huck and Jim stayed on the island many days.
39. Huck and Jim hunted and fished.
40. The townspeople searched the island.
41. Huck and Jim headed down the Mississippi.
42. Huck and Jim planned <u>something</u>.
43. (something=) They would go to Cairo.
44. At Cairo they would take a steamboat to free territory.

SECTION D

45. One night they were drifting on a raft down the Mississippi.
46. A boat loomed up before them.
47. The boat smashed the raft.
48. Huck and Jim swam for shore.
49. Shortly afterward they met two men.
50. The two men pretended something.
51. (something=) The two men were royalty.
52. The two men called themselves the Duke and the King.
53. The two men made many demands upon Huck and Jim.
54. The two men were schemers.
55. In one town the Duke and the King staged a show.
56. The show was a fake.
57. The show netted the Duke and the King a few hundred dollars.
58. The Duke and the King received the money.
59. The Duke and the King ran off.

SECTION E

60. In another town the two men heard about something.
61. (something=) Peter Wilks died.
62. Wilks left his estate to his three daughters.
63. Wilks' two brothers were living in England.
64. No one in town had ever seen the two brothers.
65. The Duke and the King went to the three daughters.
66. The daughters were Mary Jane, Susan, and Joanna.
67. The Duke and the King pretended something.
68. (something=) The Duke and the King were the girls' uncles.
69. The Duke and the King put up the girls' property for auction.
70. This deed saddened the girls.
71. Huck did not want something.
72. (something=) The girls were unhappy.
73. Huck employed numerous lies.
74. Huck exposed the Duke and the King.
75. Huck and Jim escaped on the raft.
76. The Duke and the King followed Huck and Jim down the river.

Grammatical Analysis

The study involves two types of analysis. The first type involves the enumeration of different types of indices in an attempt to determine which is the most accurate index by which to measure students' syntactic fluency in writing. The second type involves comparisons of the frequency of grammatical constructions which resulted when students employed different generalized transformations to combine identical sets of kernel-like T-units.

In the first type of analysis four different indices by which to gauge maturity in writing were considered. The first index is the subordination ratio. Rather than employing the LaBrant ratio, in which all predicates are counted as clauses, the investigator employed Hunt's version of the ratio, in which coordinated verb phrases are treated as being a part of a single clause.

The second index is the mean number of words per subordinate clause. This index, which has been used by LaBrant and Hunt, involves several arbitrary decisions. For example, if a subordinate clause is embedded within a second subordinate clause, should the words within the most deeply embedded clause

also be added to the word count of its matrix subordinate clause? For instance, in the sentence That the man who was responsible would be punished was open to question, should who was responsible be counted separately but not as part of its matrix subordinate clause or should its words be counted separately and also again as part of its immediate matrix? If one makes the former choice, he ignores the fact that the who clause is indeed part of the larger noun clause. If one makes the latter choice, he inflates the total number of words in the two clauses; in the latter case he would say that the two clauses contain 16 words, which would be contrary to fact. The investigator took the former option, including the word count of subordinate clauses embedded into matrix subordinate clauses separately and again as part of the wordage of the immediate matrix.

A second arbitrary decision relating to this index also conderns what to count as part of the subordinate clauses. Christensen argues that certain constructions such as appositives or absoulutes should not be included in the word count of subordinate clauses.[3] He reasons that, since they make a rhetorical difference, all grammatically "loose or additive or unessential or non-restrictive" constructions should be classified separately. According to Christensen, his type of analysis will reveal that the sentences of the best writers will reveal a small word count per clause. Christensen's objections depend upon the definition

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[3]Francis Christensen, "The Problem of Defining a Mature Style," The English Journal, LVII (April, 1968), 572-579.

of clause. If a clause by one's definition does not contain "loose or additive or unessential or non-restrictive" constructions, then mature writing will probably be marked by short clauses. If, on the other hand, a clause by one's definition does contain these constructions, then mature writing will probably be marked by long clauses.

The investigator has taken the latter option. Since this study is concerned with determining the most accurate index for measuring syntactic fluency, the investigator employed the index as it has previously been used, siding with the traditional grammarian who would include "free modifiers" such as appositives and absolute constructions as part of main or subordinate clauses.

The third index is the mean number of words per T-unit. The T-unit is a segment of discourse in which all coordinating conjunctions between main clauses have been eliminated, with all sentence fragments deleted or attached to preceding or following clauses. Hunt found that the mean number of words per T-unit is the best predictor of grade; that is, the average number of words per T-unit is the best index of students' maturity in writing.

The fourth index, which is hypothesized as being the most accurate index of maturity in writing, is the average level at which constituent kernels are embedded in or attached to a matrix. It is assumed that a sentence is made up of a matrix kernel to which a series of optional kernels may be added, and that the constituent kernels embedded in or attached to the matrix may

have still other kernels embedded or attached to them. The notion of embedding or attaching a constituent kernel into a matrix is based on the notion of a generalized transformation, which Chomsky advocated in Syntactic Structures and "A Transformational Approach to Syntax." Although Chomsky in Aspects of a Theory of Syntax abandons the notion of a generalized transformation (that is, one that involves two separate phrase markers), favoring instead "a linear sequence of singulary transformations,"[4] the notion of embedding constituent sentences into a matrix seems like an immensely practical construct and will be employed in this study.

In each sentence the matrix kernel is assigned a depth of 1. Whenever coordination takes place, the latter coordinate element takes on the same depth designation as the former element. If an appositive or a non-restrictive clause is attached to the matrix, it is assigned a depth of 2; if it is attached to a constituent kernel, it has a number one higher than the element to which it is attached. Similarly, subordinate clauses, participial phrases, gerund phrases, infinitives, and the like have one higher number than the element to which they are attached. Finally, if there is structural ambiguity, the lowest possible designation will always be assigned.

Each element represents an underlying kernel rather than surface structure modification. Thus, since the death of Peter

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[4]Noam Chomsky, Aspects of a Theory of Syntax, p. 135.

Wilks stems from the underlying kernel Peter Wilks died, it would be counted as a single element rather than as two elements--that is, the noun modified by the prepositional phrase. To determine the average level of embedding or attaching, the investigator divided the total number of depth designations by the total number of elements.

The following sentences taken from student's writing illustrate the notion "average level of embedding or attaching," or more briefly, "average depth."

This high-handed deed made the girls sad.

The underlying kernels are assumed to be

This deed made X.

This deed is high-handed.

X= The girls are sad.

The matrix This deed made X is assigned a 1; the two constituent sentences are both embedded into the matrix and are assigned a depth of 2. The total number of depth designations is 5, the number of elements is 3, and the average level of embedding or attaching is 5/3 or 1 2/3.

Huck's father took him to a cabin in the woods where he kept Huck a prisoner.

The underlying kernels are assumed to be

The father took him to a cabin.

Huck has a father.

The cabin is in the woods.

He kept Huck something.

something= Huck was a prisoner.

The matrix The father took him to a cabin is assigned a 1; the next two constituent kernels--Huck has a father and The cabin is in the woods--since they are both embedded into the matrix are each assigned a 2; the constituent kernel He kept Huck something contains a structural ambiguity in that it may be embedded either into the preceding constituent kernel or into the matrix. Since in the event of structural ambiguity the lowest possible designation is always assigned, it is assumed that the constituent kernel embeds into the matrix and is therefore assigned a 2. Since the final constituent kernel Huck was a prisoner embeds into the preceding kernel, it is assigned a 3. In this sentence the total number of depth designations is 10, the number of elements is 5, and the average level of embedding or attaching is 10/5 or 2.

Huck did not like living with Widow Douglas because he had to go to school and learn to read.

The underlying kernels are assumed to be

Huck did not like X.

X= Huck lived with Widow Douglas.

Huck had to go to school

Huck had to learn Y.

Y= Huck reads (something).

The matrix kernel Huck did not like X is assigned a 1; the two following constituent kernels are each assigned a 2 since they

both embed into the matrix. The constituent kernel Huck had to go to school is construed as a single kernel with had as a modal rather than as two kernels with a latter kernel, Huck went to school, serving as an object of had. On the subject Jespersen writes, "I have to with infinitive means 'am obliged to' and has in the last few centuries been extensively used as a substitute for must, chiefly because it allows of tense and other distinctions not found in must."[5] Huck had to learn Y, which is coordinated with the preceding constituent kernel, is also given a 2. The final kernel, Huck reads (something), is embedded into the preceding constituent kernel and is assigned a 3. The total number of depth designations is 10, the number of elements is 5, and the average deptn is 10/5 or 2.

The second type of analysis involves comparisons of the frequency of use of certain grammatical constructions by various groups of secondary school students. Comparisons were made dealing with the grammatical constructions students used in combining identical sets of kernel-like T-units. The investigator listed for each student those constructions which appeared as a result of combining the T-units on the instrument. Theoretically, since there were 76 items on the instrument, each student should have had a profile of 76 sets of syntactic structures. However, certain students contrary

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[5]Otto Jespersen, Essentials of English Grammar (Forge Village, Mass.: The University of Alabama Press, 1964), p. 332.

to the instructions given them did not account for all the "ideas" expressed in the T-units, therefore necessitating the creation of an "omission" category which indicated the failure of students to account for certain T-units on the instrument.

The following designations represent the general types of grammatical constructions encountered. For the purposes of brevity the kernel-like T-units will be called kernels.

M represents a matrix kernel into which other constituent kernels are embedded or attached. The matrix kernel, which may have singulary transformations performed upon it, is generally quite similar to the form of its corresponding T-unit on the instrument.

and M, but M, for M represent the concatenation of matrix kernels.

and pred, but pred, pred represent the concatenation of predicates. and represents the deletion of the introductory that.

nom (M) that, nom (M) what, etc. represent noun clauses. that represents the deletion of the introductory that.

nom inf and nom gerund represent nominalized infinitives and gerunds.

sub-although, sub-because, sub-since, sub-when, etc. represent adverbial subordinate clauses.

rel-who, rel-which, rel-that, etc. represent relative clauses.

prep-rel represents a relative clause immediately proceded by a preposition.

inf represents an adjectival or adverbial infinitive or infinitive phrase when it is the lone residue of the constituent kernel.

V+ing represents a participial phrase. Participials of all tenses and voices are grouped together.

app represents appositives.

adj represents a direct adjective which results when an underlying constituent kernel with a predicate adjective is embedded into a matrix.

abs con represents an absolute construction.

after+V+ing, while+V+ing, before+V+ing, etc. represent participial phrases preceded by various subordinators. This construction involves the deletion of the subject and an auxiliary or a copulative verb.

The following are illustrations of some of the more common combinations of constructions which appeared as the residue of constituent kernels.

nom (gen)	Peter Wilks died	Peter Wilks' death
nom+gen	The pig bled.	The blood of the pig
nom+inf	Huck was sad.	(It made) Huck to be sad.
With+nom+V+ing	The two men followed Huck.	with the two men following Huck

The frequency with which these constructions are employed by various groups in combining sentences was determined and subjected to a statistical analysis. Those constructions which were used fairly infrequently will be discussed but did not enter into the statistical analysis. Other grammatical constructions such as

in-rel-which, from-rel-whom, etc. will be discussed but were collapsed into a larger category (prep-rel) for the statistical analysis.